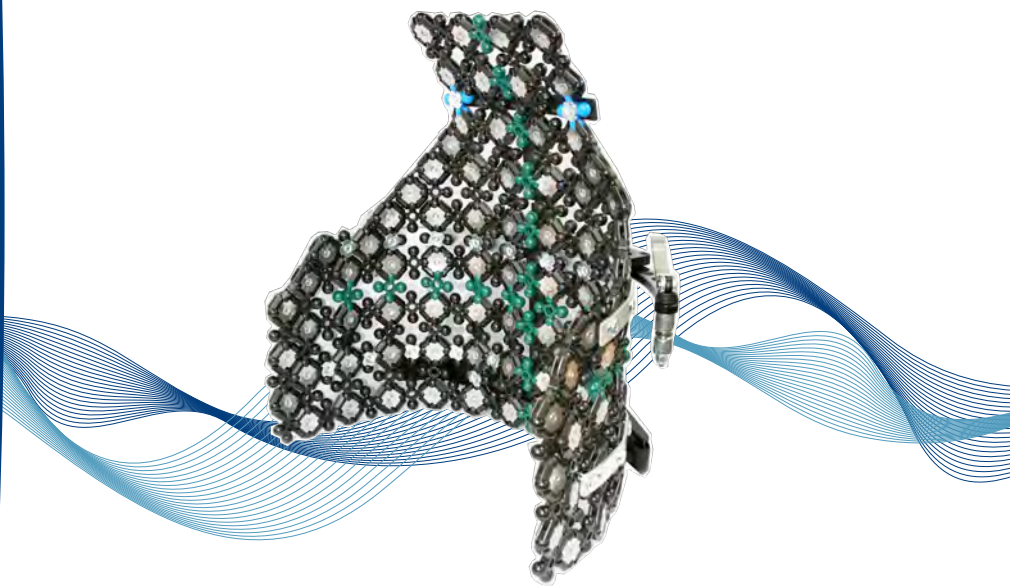
Specialised
Orthotic
Services

Matrix
Backrest System



USER'S MANUAL

ALL USER'S OF THE EQUIPMENT SHOULD BE AWARE
OF THIS DOCUMENT AND ITS CONTENT

CUSTOM MADE DEVICE

ISSUE 2

Specification of the Backrest System supplied.

- Specified below are the details of the equipment supplied.
- On the list each item ticked is a part of your Backrest System and opposite each item is the reference of the relevant section in this user documentation for that item.

Backrest System Reference No.	Date Issued: / /

Backrest System Type	Weight of Backrest System	Kg

			User Manual Reference	
Item	**Tick if supplied**	**No. of Items Supplied**	**Page**	**Section**
Matrix Backrest System				
Detachable Liner				
Adjustable Headrest				
Cover				

Specify any other features;	Maximum Client Weight Limit for Backrest System Kg
	It is recommended that this equipment is only suitable for use; Indoor ☐ Indoor & Outdoor ☐

Details of wheelchair(s) approved for use with the Backrest System.

Model of Wheelchair	Wheelchair Manufacturers Reference Number	Tested at (Specify Angle)

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MATRIX BACKREST SYSTEM
(Custom Made Device)

Introduction

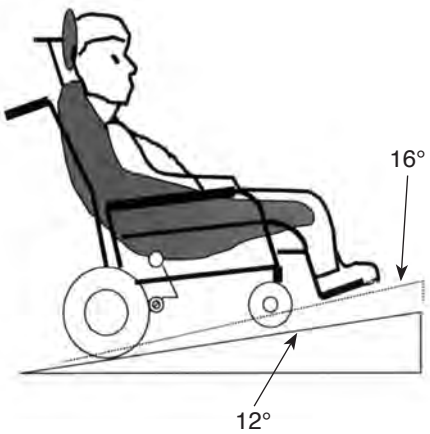
- This Users Guide for the Matrix Backrest System is designed to give guidance on its use and maintenance.
- The Backrest is custom made to suit an individual clients postural requirements.
- Each Backrest is manufactured for a particular individual and ***must not be used to support anyone else***.
- The Backrest gives overall postural support so the clients weight is evenly distributed over a large area. This improves comfort and should reduce pressure problems.
- The Backrest is also manufactured for use with a particular wheelchair or buggy. To make sure that placing the Backrest in the wheelchair does not render it unstable, each Backrest supplied is tested for stability and a Certificate of Compliance is issued to verify that the level of stability is satisfactory (for more details regarding stability of wheelchair & seating systems, see pages 4 & 5).
- It is recommended that initial use of the Backrest by the client after hand over is closely monitored for the first few days. Particular attention should be given to checking the client for any signs of pressure areas, which appear to be caused by using in the Backrest. If there is any indication of any abnormal pressure areas then refer the client back to the Special Seating Clinic as soon as possible. If the incidence of pressure is very severe then it is recommended that the client stops using the Backrest until this can be assessed back at the Seating Clinic.
- The maintenance and safety instructions described in the manual must be adhered to. By following these instructions you will be ensuring correct use of the Backrest and its safety in use.
- It is also important to read the 'Wheelchair User Manual' with regard to general use, transportation use and maintenance.

Clinical Review

- To ensure that the Matrix Backrest System still meets the clinical requirement of the client, it is recommended that the Matrix Backrest is reviewed by the Special Seating Clinic at least once a year.
- This may be done automatically by your Wheelchair Service.
- If a client has had an Matrix Backrest over twelve months it is recommended that you contact the Wheelchair Service for a review. This will ensure that the Matrix Backrest is maintaining the clinical needs of the client.
- If you feel that the client needs to be assessed with regard to any seating needs, then contact your Wheelchair Service.

Stability of Wheelchair and Backrest Systems

- To ensure that the Matrix Backrest and wheelchair are safe to use, it is important that fitting the Matrix Backrest to the wheelchair does not make the wheelchair unstable during normal daily use. Each Matrix Backrest when handed over to the user will be tested for stability to the relevant angle of stability for the chair to be tested.
- The recommended maximum angle of tilt is 12° for attendant transit wheelchairs and 16° for users of self propelling wheelchairs and 16° for users of electric indoor and electric outdoor wheelchairs.
- If the client is going to use additional items mounted to the wheelchair or backrest system such as communications aids etc., then it is essential that the test be done with these in situ to access their impact on the safety of the wheelchair. Similarly, simple items such as trays need to be in place for the test to take into account all the equipment to be used by the client (see diagram opposite).



- The stability test is always done with the client seated in the wheelchair and all equipment to be used by the client on a daily basis when in the wheelchair in situ. The combined client Backrest System and wheelchair assembly is tested to the specified maximum angle of tilt.
- Once the test has been successfully completed, a Stability Certificate will be issued by Specialised Orthotic Services Limited. A copy of this certificate will be handed over when the equipment is supplied and should be kept with the user manual for future reference.

Stability of Wheelchair and Backrest Systems (Cont.)

- **The Matrix Backrest is not to be used with any other wheelchair(s) than those for which it has been stability tested and proven safe for use.**
- **Always steer clear of obstacles where possible.**
- **When using the equipment never attempt to climb or descend an incline where the surface is rough, wet or slippery (gravel, loose chippings, grass, rain, ice, snow, etc).**
- **If the equipment is to be used in an electric wheelchair then read carefully the wheelchair manufacturers instructions with regard to safety.**
- ***WARNING:*** **Whilst the client is seated in the wheelchair, the attachment of any heavy object to the wheelchair (i.e. shopping bags etc.) will have a serious effect on the overall stability of the wheelchair and may place the safety of the client at risk.**

Recommendations for the Transportation of SOS Backrest Systems

The following information is intended to give guidance with regard to the use of SOS Backrest Systems by wheelchair users and carers during transportation.

- ***Specialised Orthotic Services Ltd*** have carried out extensive investigations into the suitability of our Special Backrest Systems for transportation use and has established clear guidelines for users.
- Following these investigations the following user information is intended to give guidance to users of SOS Backrest Systems regarding the use of the equipment during transportation.
- All SOS Backrest Systems are prescribed via Special Seating Clinics and during the assessment process the wheelchair to be used with the Backrest System will be identified.
- As part of the assessment process, transportation requirements will be assessed and a suitable wheelchair prescribed for use with the Backrest System.

This information will be of interest to all parties involved in the daily management of the wheelchair user (Relatives, Carers, Support Staff, Healthcare Professionals and Transport Service Providers).

General Safety Guidelines for Wheelchair User Transportation

- Wheelchair users should transfer to vehicle seats whenever possible.
- Wheelchair users should not travel with the wheelchair at an angle or facing sideways to the direction of travel.
- There should be sufficient free space around the wheelchair and user to avoid the user making contact with other vehicle occupants, unpadded parts of the vehicle, wheelchair accessories or W.T.O.R.S. anchor points.
- Wheelchairs should have the parking brakes applied and their power units switched off during vehicle movement. Powered wheelchairs should not be left in free wheel mode.
- Wheelchairs should not block gangways and exits for other passengers in the vehicle.
- A headrest should be provided for a wheelchair user when travelling in a vehicle where other seated passengers have headrests.
- Do not place / hang any additional items onto the wheelchair during transportation such as shopping bags and holdalls.
- Trays should be removed for transportation whenever possible. If it is necessary for a tray to be used on transportation, then a risk assessment should be done.

Wheelchair Tie Down and Occupant Restraint System (W.T.O.R.S.)

- Secure methods for the safe retention of wheelchairs have been developed and are used on a regular basis to secure wheelchairs during transportation use.
- These systems are now commonly referred to as **W.T.O.R.S.**

Wheelchair Tie down and Occupant Restraint Systems

- There are many types of W.T.O.R.S. available from various manufacturers (a list of some manufacturers is given on page 9). Refer to your Wheelchair Manufacturers Handbook for details of their particular recommendations.
- Please note that all lap /chest belts and harnesses supplied with the seating system ***are not*** sufficient for occupant restraint when the equipment is used on a moving vehicle and additional Occupant Restraint is required.

Use of Backrest System in a Wheelchair for Transportation

To make sure that the Backrest system and wheelchair are used effectively and safely for transportation use, the following recommendations are provided for:

- The Backrest System - Wheelchair Interface (see page 10)
- The Wheelchair Tie down System
- The Occupant Restraint System

1. WHEELCHAIR TIE DOWN SYSTEM

- **Wheelchair users should not travel in cars, taxis or minibuses, unless the wheelchair is tied down.**
- Please refer to your wheelchair users guide for information regarding the recommended wheelchair tie down system to be used.
- Only the wheelchair specified for use with the Backrest system can be used.

2. OCCUPANT RESTRAINT SYSTEM

- **Wheelchair users should not travel in cars, taxis or minibuses, unless an occupant restraint system is in place on the client.**
- For any client to be transported safely in the Backrest System and wheelchair, it is essential that an Occupant Restraint System be used.
- SOS have proven during crash tests on Seating/Backrest Systems that transporting any client on a moving vehicle without an approved occupant restraint system is extremely dangerous and will place the ***client at great risk.***
- It is important that the Occupant Restraint System is positioned correctly as most clients using Special Seating/Backrests will be dependent on carers for correct placement of the occupant restraint.
- Consideration should be given to the most suitable type and positioning of restraint for the user, both in normal travel and during an impact.
- The Occupant Restraint should have a clear path from the user to the anchor point and should not be interfered with by any part of the vehicle, wheelchair, backrest or accessory.

Stowage of the Backrest System and Wheelchair

- During use of your Matrix Backrest System it may be necessary for you to remove the Backrest System and stow this along with the wheelchair in a vehicle.
- It is ***important*** to realise that these items pose a ***risk*** if not adequately restrained whilst in transit.
- It is ***not*** adequate to simply place the items into a car boot or the floor of an open vehicle such as an MPV or estate car as in a collision these unsecured items could cause ***serious injury*** to occupants of the vehicle.
- Various retention methods are available to secure such equipment during transit, and once again the list of Wheelchair Restraint System Manufacturers in this booklet will be happy to advise on this matter (see below).

W.T.O.R.S MANUFACTURERS

Below are details of some Wheelchair Tie down and Occupant Restraint Systems manufacturers.

UNWIN SAFETY SYSTEMS	Unwin House The Horseshoe Coat Road Martock Somerset TA12 6EY	TEL: 01935 827740 FAX: 01935 827760 E Mail: sales@unwin-safety.co.uk
KOLLER ENGINEERING LTD	Unit 5, Garrett Road Lynx Trading Estate Yeovil Somerset BA20 2TJ	TEL: 01935 426695 FAX: 01935 433766 E Mail: enquiries@koller.co.uk
QSTRAINT (EUROPE)	Unit 175 John Wilson Business Park Whitstable Kent CT5 3RB	TEL: 01227 773035 FAX: 01227 770035 E Mail: qstraint@qstraint.com
SAFETEX	Unit 16 / 17 Bookham Industrial Park Church Road Bookham Surrey KT23 3EU	TEL: 01372 451272 FAX: 01372 451282 E Mail: sales@safetex.com

USER GUIDE 1.0

THE MATRIX BACKREST SYSTEM WHEELCHAIR INTERFACE

- The Matrix Backrest will have been built to suit the wheelchair specified at the assessment. The method of interfacing the seat may vary and the 2 types of interface options are described in this section.

1.1. MOUNTING THE MATRIX BACKREST

FULLY CLAMPED INTERFACE (Not Shown)

- When the Backrest is in place in the wheelchair it is clamped to the wheelchair push handles/uprights and cannot be removed from the wheelchair without the use of tools.

V-TRACK SYSTEM INTERFACE

- The V-Trak system is used when frequent removal from the wheelchair is required, the key parts are identified below (Fig.1.1), for fitting/removal of the backrest see next page.

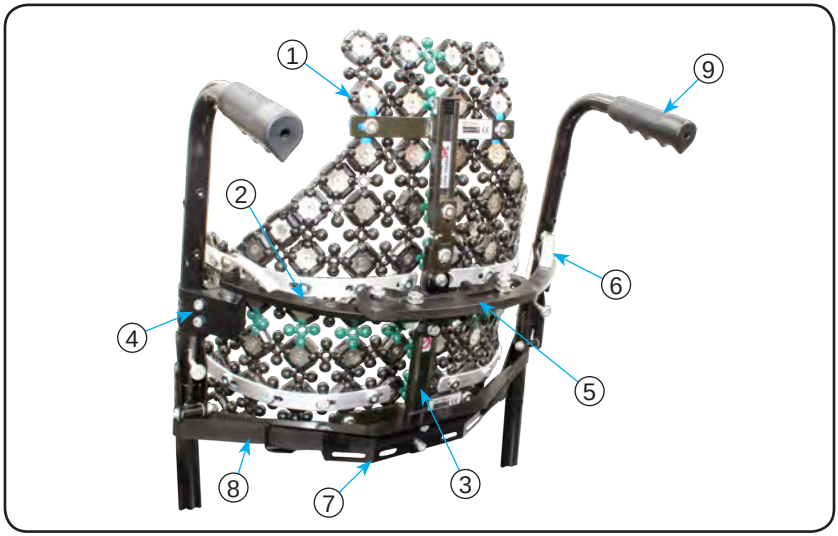


Fig.1.1 V-Trak System

1. *Backrest*
2. *Arms*
3. *Backrest Track*
4. *Mounting Block*
5. *Central Mount*
6. *Locking Lever*
7. *Secondary Arms*
8. *Straps*
9. *Wheelchair Push Handle (not supplied)*

1.1. MOUNTING THE MATRIX BACKREST (Cont.)

- Ensure that both locking levers in the open position, lower the pins into the two mounting blocks (Fig.1.1a). ***Note:*** Taller backrests may have two sets of locking levers (four in total).
- When the pins are located in the mounting blocks, push down firmly to ensure that the pins are fully located then press the locking levers downwards (Fig.1.1b) until fully horizontal. The backrest will now locked into the wheelchair.
- Wrap the lower arm retention straps (if fitted) around the wheelchair uprights/push handles (Fig.1.1c), pull the strap back through the secondary arms (Fig.1.1d) and velcro in position (Fig.1.1e).
- With the Backrest now installed into the wheelchair it is now safe to place the client in position.
- Removing the Backrest from the wheelchair is the reverse of the above procedure.

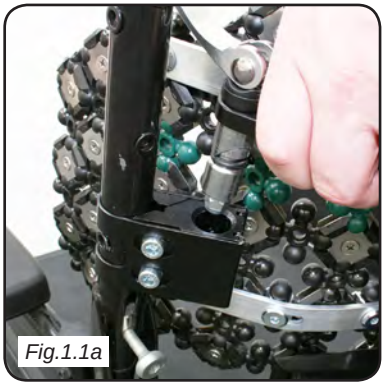


Fig.1.1a

Fig.1.1b

Fig.1.1c

Fig.1.1d

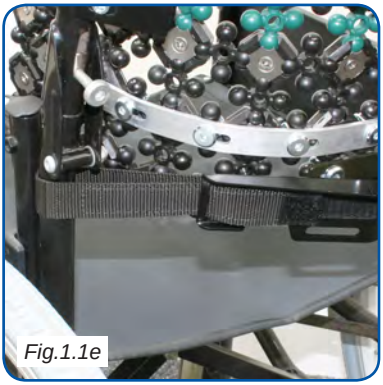


Fig.1.1e

1.2. MATRIX BACKREST COVER

- If the Backrest is fitted with a cover, check that the cover fits neatly.
- Every time a cover is made for the Backrest a pattern is kept. Therefore if any duplicate covers are required, these can be easily made without the need to see the client or the Backrest.
- Contact your Wheelchair Service for further details or contact SOS (see back page for details).

1.3. ELECTRIC WHEELCHAIRS

- When fitting the Backrest to an electric wheelchair, the fitting procedures are the same as in 1.1.
- However it is also necessary to make sure that any electric cables etc., are not trapped or jammed by the Backrest during placement into an electric wheelchair.

1.4. MAINTAINING THE WHEELCHAIRS

- It is important that the wheelchair manufacturers guidelines for maintenance are carried out.
- Under inflated tyres or faulty brakes etc. can render a wheelchair dangerous if used with such faults.
- All new wheelchairs are supplied with a copy of the manufacturers user instructions.
- You should have a copy of the Wheelchair Manufacturers User Information.
- If you do not have a copy, contact your Wheelchair Service to obtain a copy.

Always maintain your wheelchair as per manufacturers instructions.

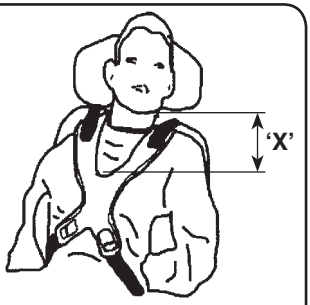
USER GUIDE 2.0

2.1. LIFTING & HANDLING THE CLIENT IN & OUT OF THE WHEELCHAIR

- Most users of Matrix Backrest Systems will need to be hoisted into the equipment. Manually lifting the client is not recommended, however with some clients it may not be possible to hoist them safely by conventional means and in instances such as this you are recommended to carry out a '***RISK ASSESSMENT***' to assess the risks involved in any such action.
- It is important that all carers are aware of the Health & Safety guidelines for '***Lifting and Handling***'.
- Before lifting the client make sure all straps are placed outside of the Wheelchair/ Backrest. This will avoid the straps becoming trapped under the client when seated.
- When using the hoist, make sure that you follow the ***hoist manufacturers instructions*** regarding correct use.
- On lowering the client into the Wheelchair make sure that the client's hips / pelvis are located as far back as possible into the seat and that the client is supported correctly via the Backrest.
- Leaving the hoist sling in the Wheelchair once the client has been placed is not recommended as this could cause discomfort and pressure areas to be generated. However, if any management issues require the sling to be left in situ then it is recommended that the most appropriate sling be used. If you require further information regarding this, contact your local Wheelchair Service Therapist.
- **Please note, that it is very important that the client is correctly positioned to give maximum comfort and support.**

2.2. CLIENT STRAPS / HARNESSES

- Secure all straps / harness supplied. Straps and harness must be tightened to work correctly.
- It is dangerous to have straps too loose or not in place on the client.
- If the Wheelchair/Backrest has been fitted with a 'Butterfly X Harness', it is important that it is correctly adjusted to maintain safe clearance at the top of the harness as illustrated in the diagram opposite at '**X**'.



Keep bottom straps of harness tight.

USER GUIDE 3.0

MAINTENANCE OF THE MATRIX BACKREST SYSTEM

To make sure that the Matrix Backrest System remains satisfactory it is necessary to carry out simple maintenance.

3.1. CLEANING THE BACKREST

- During use the Backrest will require cleaning. This can be done by simply applying a warm damp cloth with a mild detergent to the surface of the Backrest to remove any soiling and towel dry. ***Note:*** The cover ***MUST*** be removed prior to any cleaning of this Backrest.
- If the Backrest remains slightly damp simply leave for a short period at room temperature to dry.
- **DO NOT PUT THE BACKREST NEXT TO A HOT FIRE OR USE EXCESSIVE HEAT TO DRY AS EXCESSIVE HEAT COULD AFFECT THE COMPONENTS MAKING UP THE SHAPE OF THE BACKREST.**
- **DO NOT USE SCOURERS OR CAUSTIC SUBSTANCES SUCH AS BLEACH**

3.2. STRETCH COVERS

- If the Backrest has been supplied with a cover this will require occasional cleaning, for cleaning of removable cover please refer to wash label on the inside of the padded cover.
- To remove the cover simply stretch off the Matrix Backrest System, taking care to guide any straps etc. through the cover before removing.
- When placing the cover back on the Backrest after cleaning, please note that the inner label should be positioned at the top of the seat to ensure correct alignment of the straps and general fit on to the Backrest.
- **ANY DEVIATIONS FROM THE ABOVE MAY AFFECT THE FIRE RETARDANCY OF THE COVER(S).**

3.3. HARNESSES, PADS & STRAPS

- Make sure all straps are in good working order and that buckles work correctly.
- If any show signs of fraying or any buckles are broken or faulty contact your Wheelchair Service immediately, ***DO NOT ATTEMPT TO REPAIR.***
- Harnesses may be cleaned by applying a warm damp cloth with a mild detergent, ***DO NOT USE POLISH.***

3.4. VISUAL INSPECTION

- Every 3 - 4 weeks check the condition of the Matrix Backrest System and wheelchair, if you notice any faults or broken parts please notify your Wheelchair Service immediately, ***DO NOT ATTEMPT TO REPAIR.***
- Look at the frame components of the Backrest and make sure there are no signs of distortion or loose attachments.
- Check the interface components for damage or looseness.

3.5. FIRE RETARDANCY

- Fire retardant materials have been used in the construction of this Backrest system.
- It is important that no accelerants are introduced to the materials (e.g. Hairspray, fabric cleaners, deodorants, polish etc..), as this may adversely affect the fire retardancy of your equipment.

USER GUIDE 4.0
OPTIONAL FEATURES

4.1. ADJUSTABLE HEADREST

- If the Backrest has been fitted with an adjustable headrest, the headrest will have been adjusted when the Backrest was originally supplied.
- If any adjustments need to be carried out this can be done by releasing the locking knobs and adjusted for height (Fig.4.1a) and depth (Fig.4.1b), re-tighten locking knobs when finished.
- **PLEASE NOTE THAT SOS RECOMMEND THE HEADREST IS USED AT ALL TIMES WHENEVER THE CLIENT IS BEING TRANSPORTED IN THEIR WHEELCHAIR AND BACKREST SYSTEM.**

Fig.4.1a

Fig.4.1b

IF YOU DETECT A FAULT OR BREAKAGE

1. **IF YOU DETECT A FAULT OR BREAKAGE OF THE EQUIPMENT THEN REPORT THIS IMMEDIATELY.**
2. **UNDER NO CIRCUMSTANCES ARE ANY MODIFICATIONS / ALTERATIONS TO BE DONE BY ANYONE OTHER THAN SPECIALISED ORTHOTIC SERVICES LTD (see contact details enclosed).**
3. **TO CONTACT SPECIALISED ORTHOTIC SERVICES LTD PLEASE REFER TO THE INFORMATION INCLUDED IN THIS USER MANUAL.**

REPAIRS & SERVICE

Within the warranty period.

All Seating Systems manufactured by Specialised Orthotic Services Ltd. carry a guarantee on the main parts for 12 months, excluding covers and straps which are guaranteed for 3 months, when used normally. If during this period the product becomes defective and needs repair then please contact SOS (please see the end of this users guide for details).

You can also contact your local wheelchair service regarding any faults requiring attention.

Outside the warranty period.

For any goods requiring repair or attention after the guaranteed period, then assessment can be made as to the cost of the work required to effect the repair.

On acceptance of this quotation the work will proceed.

Misuse or neglect.

The repairs necessary resulting from misuse or neglect, whether within the warranty period or not will be charged for.

MEDICAL DEVICES DIRECTIVE 93 / 42 EEC

Specialised Orthotic Services Ltd. in compliance with the Medical Devices Directive have an obligation to investigate and take corrective action on defective devices. To assist us with this procedure we would appreciate your assistance in meeting this obligation by informing us as soon as possible and make the device available for inspection as soon as possible having become aware of a defect.

We are required to notify the Competent Authority of certain types of incidents within 10 to 30 days.

As part of our quality system we have established procedures to deal with such incidences and would appreciate your swift notification to us via our telephone, fax or e-mail details at the end of this users manual.

NOTES:

If you require further copies of this handout or require further details relating to any of its content, then please contact us (Copyright applies):

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